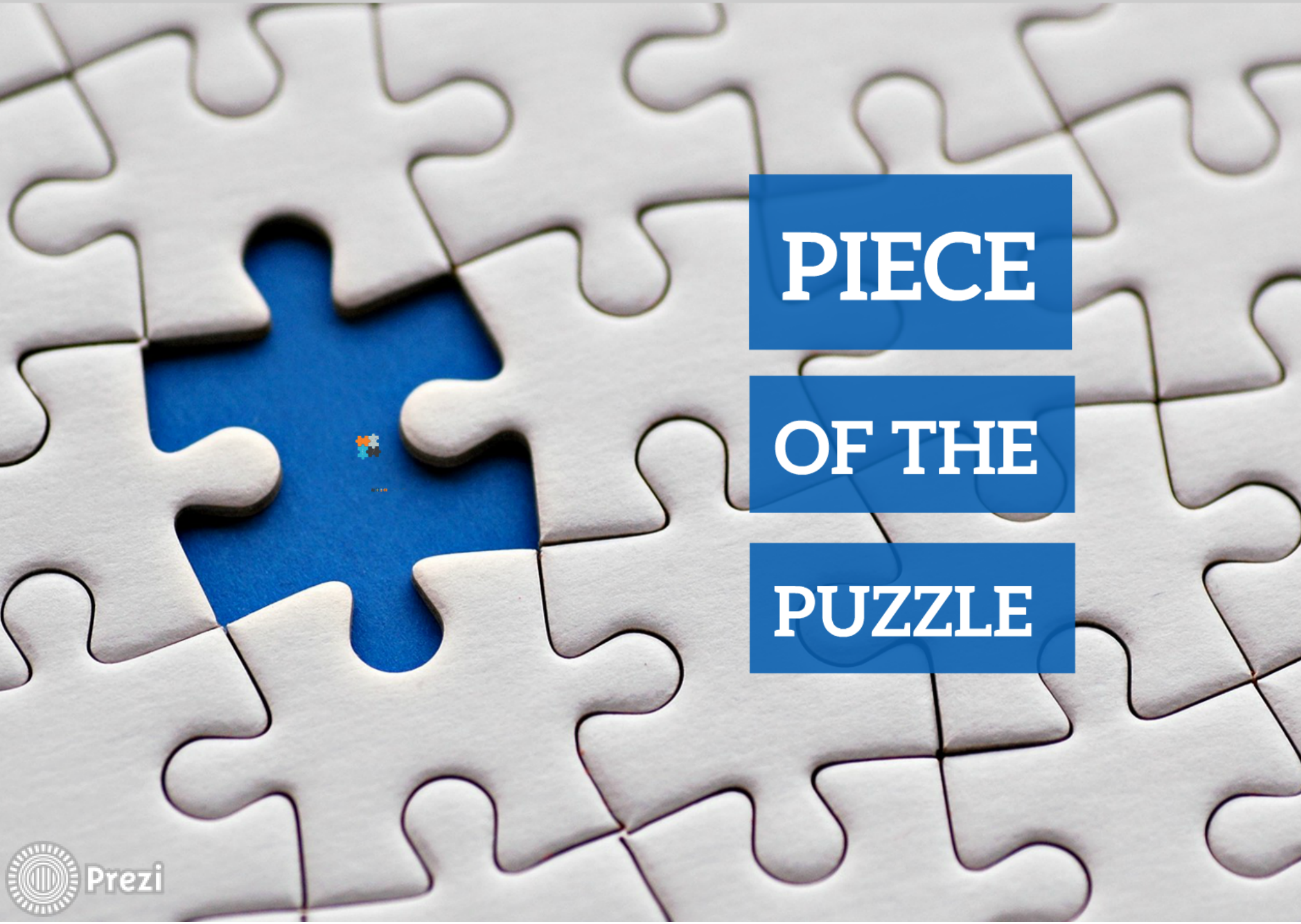
PIECE
OF THE
PUZZLE
Prezi

state law requires authorization to place materials or structures in the Great Lakes

this means once the decision to place materials to slow erosion is made, the landowner must get a state permit to proceed.

WDNR is one piece of the bigger picture

The permit process is in place to allow the state to ensure that the project will not impact public rights and interests

this means for projects in public water the state must review fish &, wildlife and water quality data and assess navigation patterns, habitat and similar features of the site to make sure the needs of the project balance with the impacts to public waters

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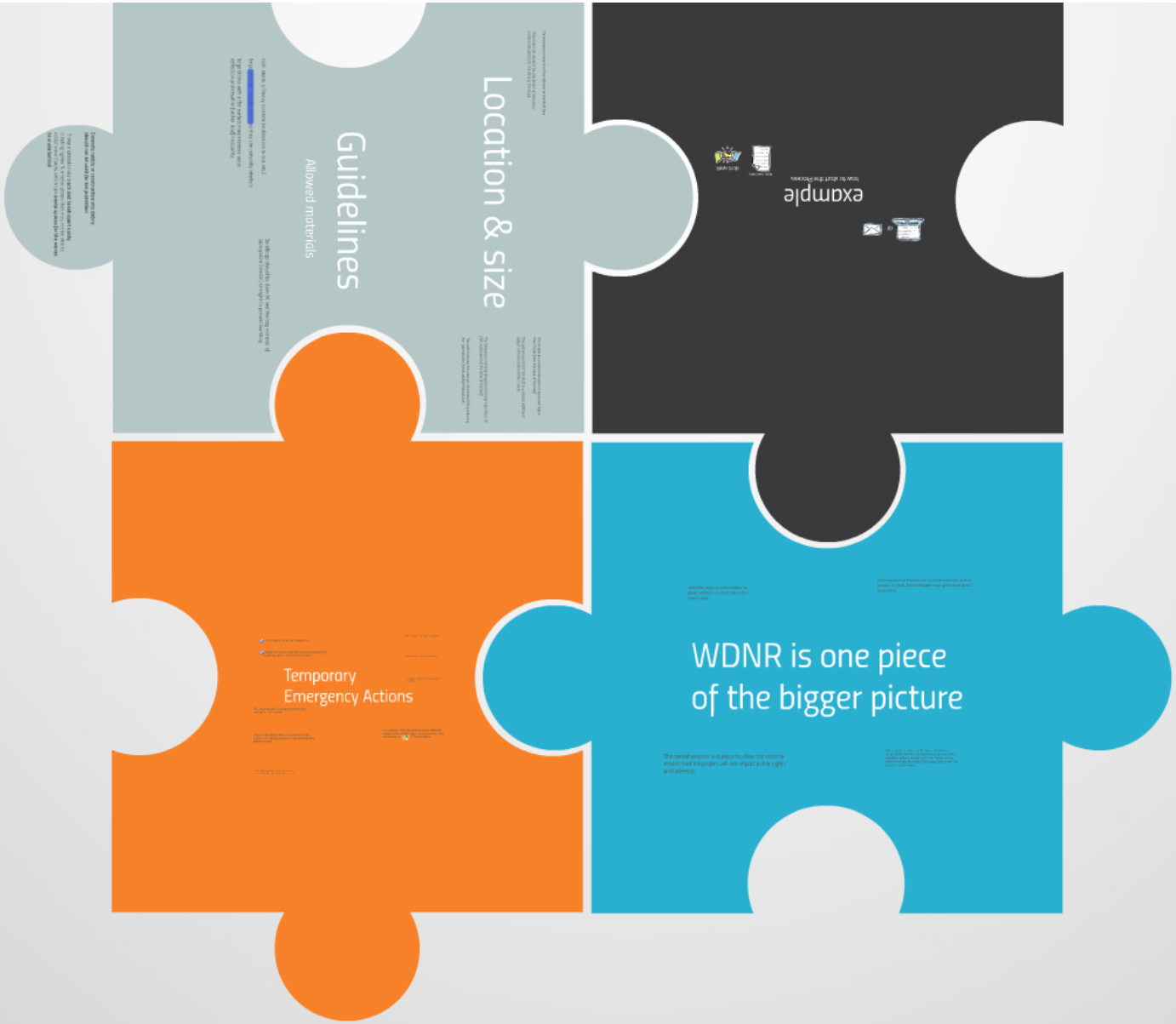
Location & size
Guidelines
Allowed materials
example
Temporary
Emergency Actions
WDNR is one piece
of the bigger picture

- In an emergency, structures may be at risk
- will allow temporary material to be placed while designing & seeking approval for a permanent solution

Temporary Emergency Actions

Where the temporary material will be **placed**

How the temporary material will be **placed**

The **type** and **amount** of temporary **materials** that will be used

The use of materials for temporary toe protection may not be 100% effective.

there are many factors that contribute to erosion like surface water runoff, groundwater, bluff material and the angle of the bluff

If the material used for **temporary** protection **cannot be** incorporated into a **final** design, it must be removed, which may increase the  of final installation

- [x] In an emergency, structures may be at risk
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Eme

The use of materials for temporary toe protection may not be 100% effective.

there are many factors that contribute to erosion like surface water runoff, groundwater, bluff material and the angle of the bluff

The department recommends hiring a Professional Engineer to properly design shore protection structures.

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example

WDNR is one piece
of the bigger picture

Location & size

Guidelines

Allowed materials

Temporary
Emergency Actions

Guidelines

Allowed materials

rials

Sandbags should be clean fill and the bag material of appropriate [tensile] strength to prevent bursting

rock, stone, or heavy concrete be clean (no re-bar, etc.)

large, non-flat, angular, pieces so they can naturally interlock

large blocks with a flat surface may increase wave reflection and result in further bluff instability

Concrete rubble or construction site debris should not be used for toe protection

These materials may **crack and break apart easily** creating lighter & smaller pieces that may not be able to resist wave forces which can **create spaces for the waves to erode behind**

al will be allowed on the bluff face

sts for placement of temporary
r the base of the slope

Location & size

No temporary material will be allowed on the bluff face

This means all requests for placement of temporary material should be for the base of the slope

The temporary material should not be placed higher than 5 feet from the base of the bluff

This will ensure that if the bluff is unstable additional weight will not make matters worse

The temporary material should not extend more than 10 feet waterward of the base of the bluff

This will minimize the amount of lakebed filling reducing the potential for fish & wildlife habitat loss

WDNR is one piece
of the bigger picture

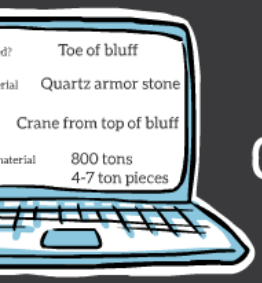
Temporary
Emergency Actions

Location & size

Guidelines

Allowed materials

example
how to start the Process

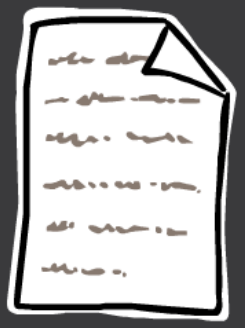


or

example

how to start the Process

letter from state



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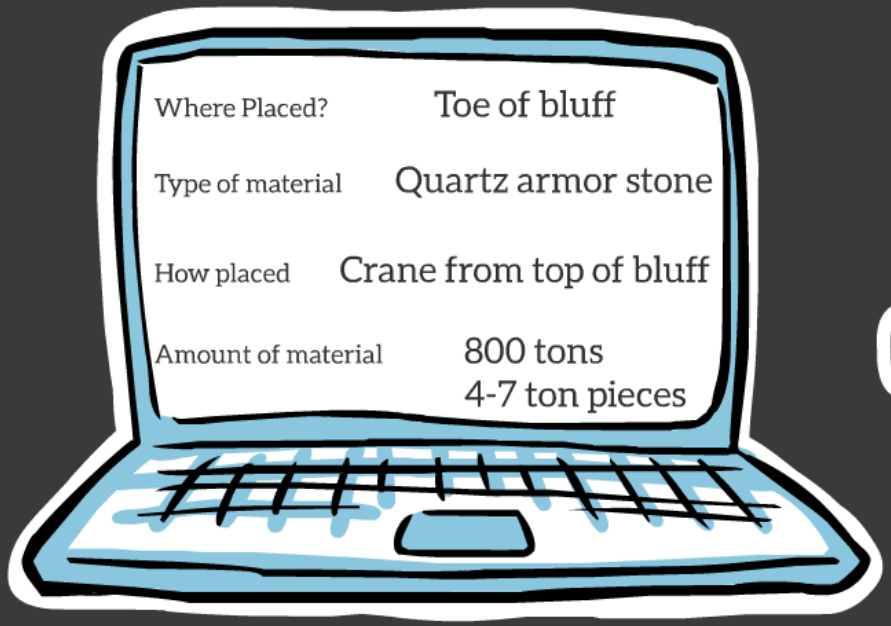
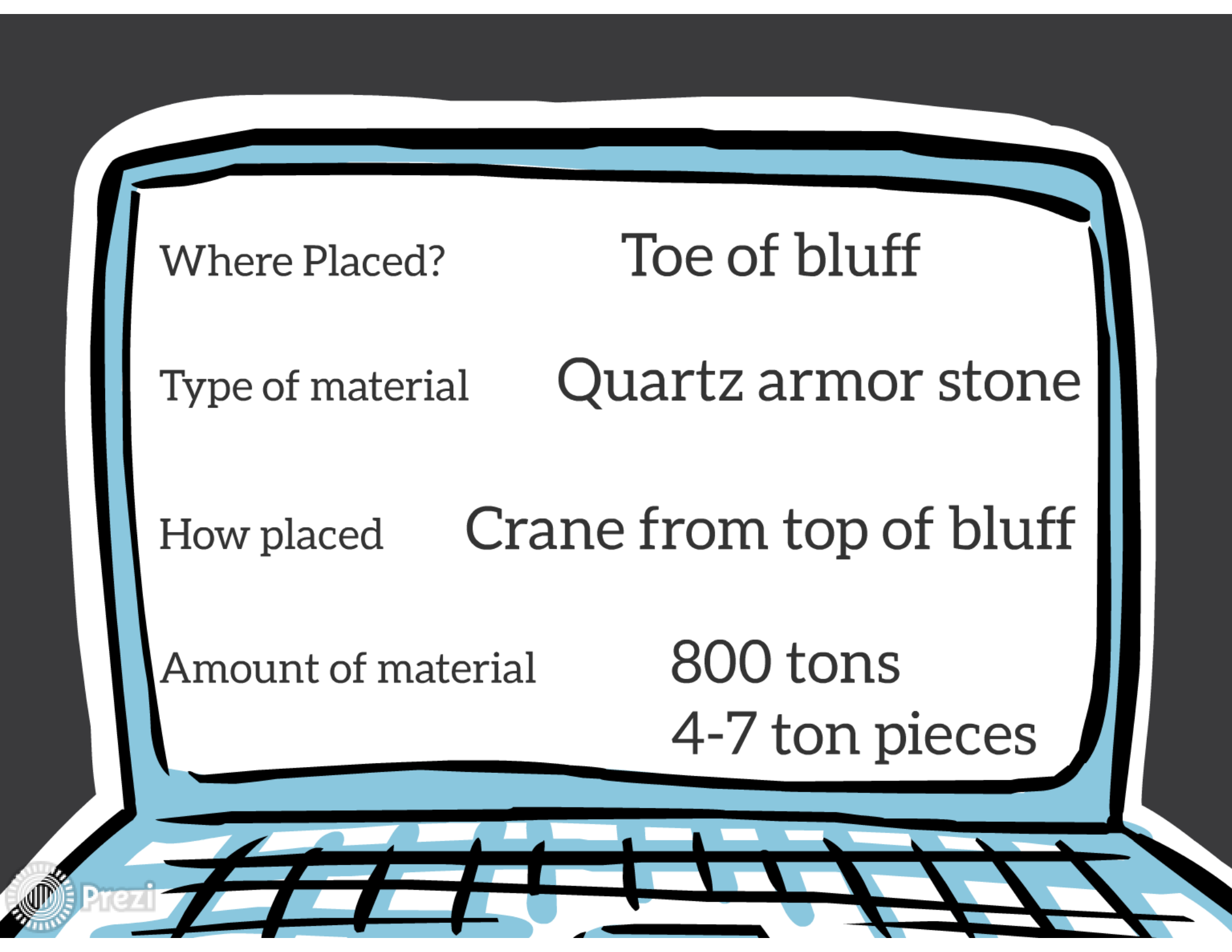

Where Placed?
Toe of bluff
Type of material
Quartz armor stone
How placed
Crane from top of bluff
Amount of material
800 tons
4-7 ton pieces

or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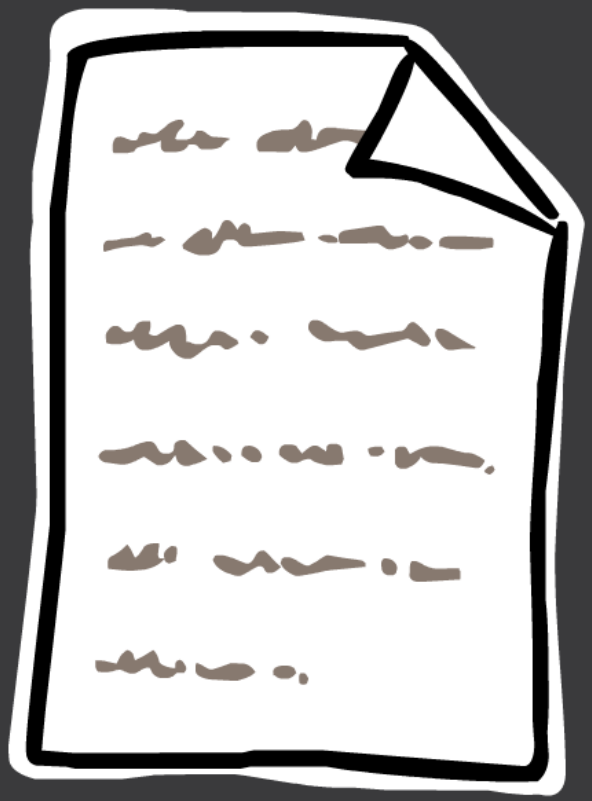
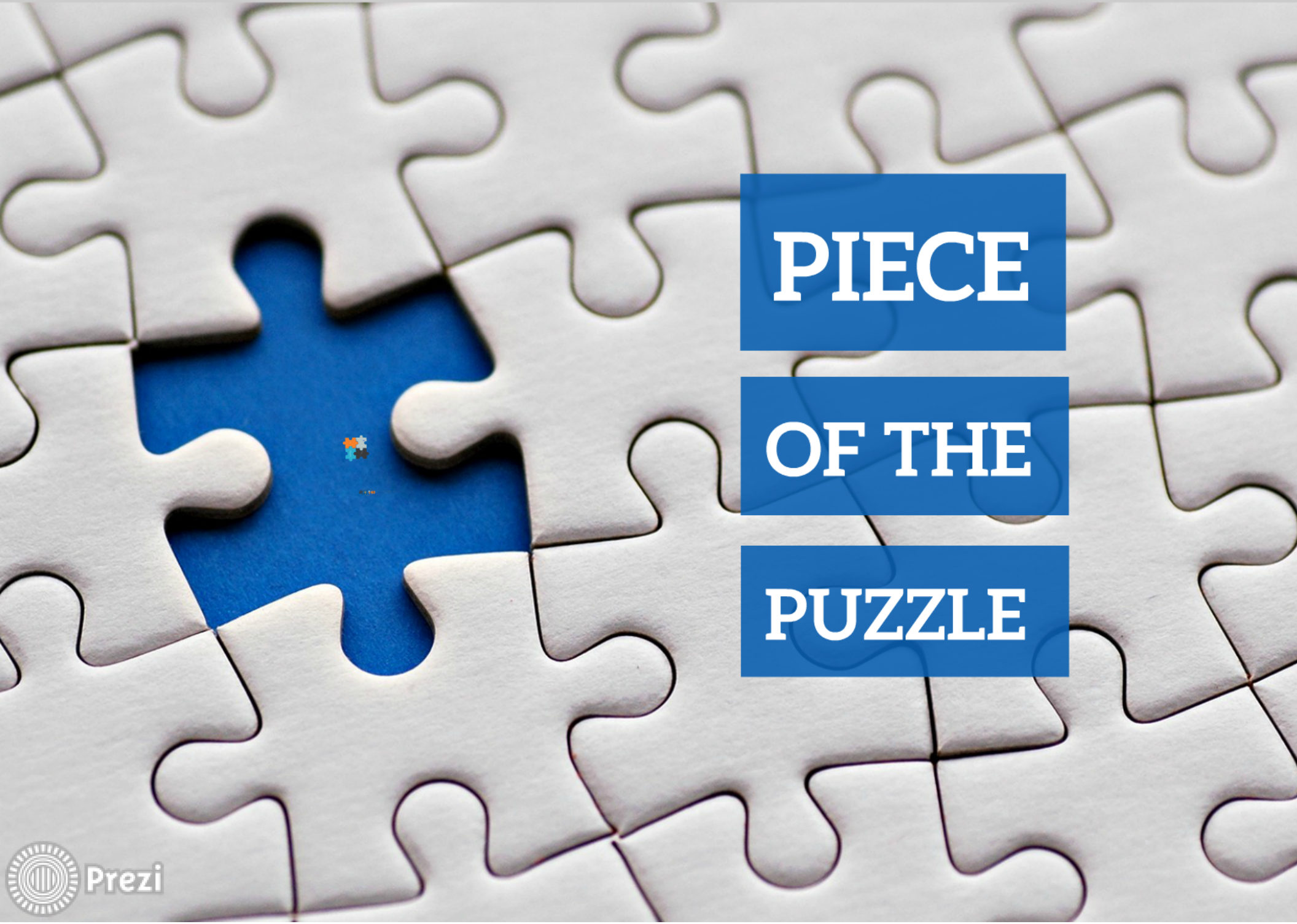


start work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